

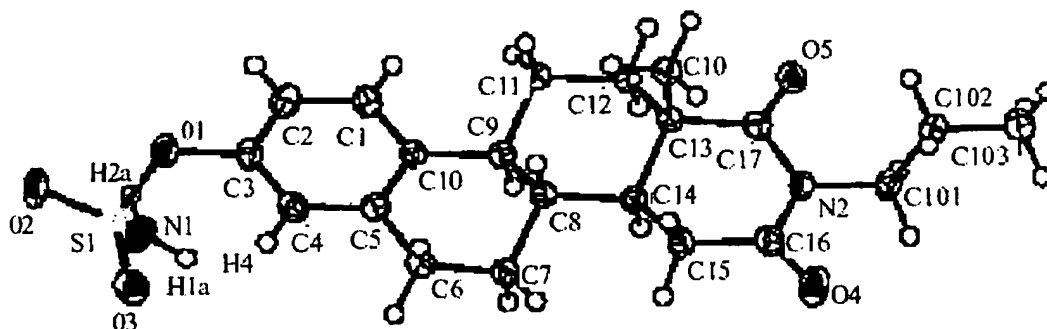
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optimum when the alkyl group was an heptyl moiety. Their potency, similar to that of EMATE, clearly underlines the presence of a hydrophobic pocket in the enzyme active site corresponding to the direction of the 17 β -substituent.

- 5 A weaker inhibition of STS by **41** therefore suggests that the orientation of its side-chain, situated on the N-atom of the D-ring (6-membered), is different enough from that of the 17 β -side-chain of **1** or **2** (5-membered D-ring) to induce a decrease of affinity with the active site of the enzyme. It can be proposed that, while there is a hydrophobic pocket in the enzyme active site for 17 β -substituents, the topology of the active site around the
- 10 N-position of a 6-membered ring could be more restrictive to bulky substituents. To corroborate this hypothesis, molecular modelling would be a tool of choice.

- In order to elucidate the orientation of the atoms in the D-ring and in the side-chain, as well as gather data for possible future molecular modelling studies, the crystal structure
- 15 of the highly potent oestrone derivative **39** was determined. A crystal (approx. dimensions 0.20 \times 0.17 \times 0.08 mm), obtained from slow recrystallization in acetone/hexane, was used for data collection.

- The ORTEP plot of the asymmetric unit of **41** is shown below along with the labelling
- 20 scheme used. The sulfamate group, all four rings, and the key features of the modified D-ring are clearly visible. As expected, the D-ring is in a half chair conformation since the imide function implies the position of the atoms C13, C17, N and C1' as well as C15, C16, N and C1' in the same plan.



- 25 ORTEP plot of the X-ray crystal structure of **41**. Ellipsoids are shown at the xx% probability level.